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ABSTRACT

A study was conducted to observe four elementary school teachers in an effort to determine the influence that their teaching styles and teaching approaches had on their students' ability to think more critically. After the teachers completed a questionnaire about their classroom situation and had a brief interview with the observer, each teacher was observed for approximately 3 hours over a period of 2 weeks. Following the observations, each teacher was associated with either one or a combination of two of the following descriptive teaching styles: expository mode, inquiry mode, demonstrative mode, and the integrated curriculum mode. Results indicated that the education and experience of the teachers made very little difference with regard to the attention that they directed to these skills; however, it did appear that instructional strategies, instructional materials, and teaching modes do affect to some extent how much critical thinking might be encouraged in the classroom. (Two tables of data are included.)
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YVONNE M. KING

TEACHING APPROACHES & CRITICAL THINKING

How Do They Interact in the Classroom?

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In recent years the teaching of critical thinking has become increasingly popular. A major reason for this is because of the documented correlations between children's ability to use critical thinking skills and their success in school. (Costa, 1989) To promote adept critical thinkers there is a need to encourage children to become more active in their thinking, to search for logical conclusions, and to suspend judgment until they have a grasp of what has been read or discussed. (Burns and Roe, 1988) Engagement in a critical thinking activity is usually met with greater success if one actually has some understanding of the thought process that one follows while moving through a mental thinking experience. An understanding of one's thought processes is technically referred to as "metacognition". Metacognition as explained by Flavell (1978) involves both the knowledge and control that an individual has over his or her own thinking and learning. If more effective learning results are to occur within the classrooms of today, a clear awareness of the interaction between critical thinking and metacognition becomes essential.

The purpose of this study was to observe four elementary school teachers in an effort to determine the influence that their teaching style and teaching approaches had on their students' ability to think more critically. This writer strongly supports the philosophy that thinking is an ability which can be strengthened and enhanced through guidance and practice. However, when one does possess a commitment towards helping children to become good critical thinkers, the regular collection of instructional materials and techniques is usually not sufficient. Although these things do hold some value, the development of a true critical thinking program extends beyond these factors and requires a certain change in the role and attitude of the teacher.

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When educators begin to make plans for including critical thinking into the entire curriculum, many questions occur as to just how and when it should be introduced. Recent literature has discussed the possibility of either adding it to the curriculum as a separate subject or of incorporating it into the teaching of all subjects. Much of the research supports the integration of higher level thinking into all subjects. More specifically, Bereiter (1984) describes two main ways to achieve this goal:

- 1) Make thinking skill activities an integral part of other already accepted instructional objectives.
- and
- 2) Permeate the instructional program so thoroughly with thinking skill activities that they cannot be isolated and reduced to verbalized subject matter.

In regards to discussions about what age or grade level would be most feasible for the introduction of critical thinking, it has repeatedly been suggested that in spite of some limitations such as short attention spans and lower reading levels, the elementary schools would be the ideal place to start this type of instruction. (Ennis, 1985, Haller, 1986)

When considering the more specific idea of how to actually include critical thinking into a classroom, a significant piece of research conducted by Durkin more than a decade ago (1978) provided a possible example of just how this might be done.

"Gone are the 'Teacher Interrogators' and the disinterested and passive student, instead the teacher becomes a facilitator of learning whose main responsibility is directing and monitoring a more student oriented discussion." (Durkin, 1978, p.491) There is an indepth kind of thinking and problem solving that is continually guided by the teacher's questions and follow-up probes for greater explanation and information. This type of teaching situation is one that should increase a child's awareness of the value that a teacher places on thinking critically. This type of teaching situation is one which should encourage students to do as described by Costa (1985); the student will ultimately be able to reflect upon, conceptualize, accumulate and apply understandings from one classroom experience to the next.

A major reason that is often cited by educators for the lack of critical thinking development is the crowded curriculum and the time factor. A concern such as this could be lessened if skill development and content area subjects were taught concurrently. Because of today's competitive society there is an urgent need for children to learn, at a young age, how to make intelligent decisions and to interpret information on many different topics and levels. Upon recognizing this need, one then understands how necessary it is for students not only to increase their body of factual knowledge, but also for them to sharpen their critical thinking skills. A general philosophy which is quite applicable to critical thinking skill instruction was described by Cohen (1981) when he stressed the need for teachers to emphasize to their students that for real learning to occur there must be a high level of thinking, that responsibility for this thinking becomes their own, and that it is commendable for them to take the time to think and to plan.

BACKGROUND OF STUDY

Why should critical thinking instruction be identified in the performance of a classroom teacher? The answer to a question such as this does have more than a theoretical significance since this information can be useful in offering some guidelines as to the type of classroom instructional planning that will enhance higher level thinking skills among the students. The main objective of this research was to examine how and how often four classroom teachers encouraged the use of critical thinking skills with their students. The two major factors that were considered when observing these teachers for the promotion of this skill were first - how they presented the lessons and second - what the instructional mode was that seemed most apparent in their teaching performance?

The first factor, lesson presentation, dealt with strategies, materials, dialogue and type of questions asked. In regards to strategic presentation, it seemed that in an effort to meet individual needs, a variety of approaches would be most beneficial. Haller (1985) found in her study of the research that the use of reinforcement and several, rather than a few, instructional strategies increased higher level comprehension skills. The second factor, instructional modes, dealt more with the associating of the teacher to a certain descriptive teaching style. This part of the research was done to determine if there were a possible pattern between a teaching mode and a teacher's emphasis on promoting critical thinking skills.

PROCEDURE OF THE STUDY

The teachers were first given a questionnaire to fill out which inquired about their classroom situation in regards to instructional material and the approach that they were using to teach reading. A brief interview was held between the observer and the teacher to explain the general purpose of the study. The teachers were aware of the fact that the researcher was interested in assessing how well the students were able to read and comprehend their subject matter. However, in an effort to avoid any undue influence on the performance of the individual teachers, there was no specific emphasis made about the value and the use of critical thinking skills.

An observation schedule was arranged that permitted the researcher to visit two classes during the time a language arts lesson was being taught and another class while a content area lesson was being taught. Each of these sessions lasted between forty-five minutes and one hour. This meant that the first teacher was observed for a total of approximately three hours over a period of two weeks, after which time the same process was followed for the remaining three teachers.

Prior to these observations it was necessary to determine exactly what teaching characteristics would be reviewed and just how they would be evaluated. The teaching characteristics which were examined included the use of higher level questions, the teacher dialogue, the use of specific thinking strategies and how the teacher incorporated critical thinking skills into the material that was being used. The use of higher level questions and thinking strategies was evaluated by an actual count of the times that they appeared in a lesson. If either of these characteristics appeared once in a lesson, the evaluative term of "rarely" was used, if it appeared twice the term "occasionally" was used and if it appeared more than twice the term "consistently" was used.

A description of the teacher characteristics which were examined in each of the lesson presentations is as follows:

- 1) Higher level thinking questions - These included questions that encouraged the student to infer, to evaluate, or to draw conclusions. A teacher was classified as using these type questions either rarely, occasionally or consistently.
- 2) Teacher Dialogue - this was examined in view of the following three teaching considerations: use of metacognition, use of wait-time and use of open ended discourse. The first consideration, use of metacognition, was where the students were encouraged to analyze their own thoughts about what was being read or discussed? In one class, prior to having her students read, the teacher checked to be certain that they understood what type of task was needed in order for them to achieve clear comprehension. For this particular group the students were able to plan how they would meet a reading goal insofar as knowing whether the answer would be actually stated in a passage, or whether the passage would include clues to help them locate the answer, or whether the answer would have to come from their background knowledge which they could use to relate to the contents of the passage. In another class during oral discussion the teacher encouraged her students to be active learners and thinkers through the responses they gave. If the response indicated a lack of full comprehension the teacher helped the students to monitor this comprehension by either having them paraphrase their response, or by asking that they question themselves about what it was that they did not actually understand. Of course the results of these teaching strategies depended greatly upon the child's maturity and background of knowledge, also it was noted that the strategies did not work equally well for all students.

The second consideration under teacher dialogue involved the use of wait-time that a teacher allotted for a student's response. With this particular sample it was found that three of the teachers allowed between five and ten seconds for a response from their students. However, certain teaching techniques which often occurred during this wait-time period and which seemed quite appropriate were the restating of a question, the providing of an example, or the probing for additional information.

The final consideration under teacher dialogue was whether or not a teacher allowed much use of open-ended discussions during class time. Judging from comments in regards to the heavy or overloaded curriculum, it appeared that each of these teachers felt some concern about the constraints placed upon their actual teaching time. One teacher did handle these more open-ended discussions quite well by using such cooperative learning strategies as the "think-pair-share" approach and the grouping of several students so as to have them form their own conclusions about a given point or topic.

- 3) Specific thinking/comprehension strategies utilized during the lesson. (Ex. advanced organizers, semantic webbing, mapping)
Again a teacher was classified as using these either rarely, occasionally or consistently.
- 4) The integration of critical thinking skills into the instructional material was determined by recording the type of dialogue, questions and thinking strategies that were used by the teachers as they presented the contents of this material to their students.

Once the first set of observations had been completed each teacher was associated with either one or a combination of two of the following descriptive teaching styles: expository mode, inquiry mode, demonstrative mode, and the integrated curriculum mode. The specific definitions and guidelines for determining the mode that best described each teaching style are listed below and were obtained from Jarolimeks' Modes of Teaching (1988).

Expository Mode - this mode, quite simply, provides an explanation.

Exposition strategies are telling or explaining strategies which have to do with a teacher providing facts, ideas, and other essential information to the learners.

Inquiry Mode - inquiry strategies in teaching and learning are those that involve learners in asking questions, seeking information, and carrying on an investigation. The learner is responsible for providing ideas and questions to be explored, proposing hypotheses to be tested, accumulating data to test these hypotheses, and coming to tentative conclusions.

Demonstration Mode - the essential components of the demonstration mode of teaching are showing - doing - and telling. Demonstrations often occur on the spur of the moment, when the teacher discovers the limitations of an explanation and are often combined with other modes of teaching such as expository and inquiry.

Integrated Curriculum Mode - this is both a method of teaching and a way of organizing the instructional program so that many disparate subjects and skills of the curriculum can be related to one another. This teaching mode makes the topic of study the integrating center of the curriculum for the purpose of providing unity to the child's school experience.

RESULTS AND IMPLICATIONS

The findings of the analyzed data for these four teachers yielded results that did not present a highly supportive picture in regards to the inclusion of critical thinking skill development within their course content. It clearly shows in Table I that education and experience do not seem to be a factor for determining how well or consistently these teachers encouraged the use of critical thinking skill development in their class lessons. However, when reviewing the instructional strategies that were used and the apparent instructional style that was employed by the teacher, these two factors did appear to have some relationship when attempting to determine how critical thinking skills were being promoted in the classroom activities. (See Table 2)

Certain patterns began to emerge as these teaching characteristics were examined more closely. In regards to those teachers who consistently utilized higher level questioning and who incorporated various thinking strategies into their lessons, it was found that these teachers also had a way of encouraging their students to analyze their own thinking processes so as to provide the child with a clearer understanding of how s/he arrived at a particular response. When examining the teacher's style of presenting his or her subject matter, it was found that those teachers who utilized the inquiry or integrated mode, also generated answers from their students which reflected a higher critical thinking level. This pattern evidenced itself primarily because when these modes were used, some students took the time to clarify and elaborate upon their personal responses after they had actively made a request for additional information from their teacher.

When reviewing the different instructional materials used by these teachers, it seemed that in this sample the less structured materials tended to allow a bit more flexibility with both the dialogue and the varied questions which were implemented by the teacher. This flexible behavior was more evident with the two teachers who followed a literature-based program, because they conducted their lessons without the use of any manual or written notes. These teachers also allowed a bit more spontaneity with interactive type discussions and seemed not to be as pressured by time constraints.

Although each of the observations did reveal some very competent educators who presented their classes in a manner that seemed to capture the interests and needs of the students, the implication with these teachers is that perhaps the more interactive teaching modes and the more loosely structured materials had a slight influence on the amount of consideration that was given to the promoting of critical thinking skills into their class activities.

SUMMARY AND RECOMMENDATIONS

A discussion of how four classroom teachers promoted the use of critical thinking skills with their students was described in this article. It was found that the education and experience of these teachers made very little difference in regards to the attention that they directed to this skill; however it did appear in this sample that instructional strategies, instructional materials and teaching modes do affect to some extent how much critical thinking might be encouraged in a classroom.

The current emphasis on critical thinking is one educational trend that is certainly needed and one that most definitely should be preserved. There needs to be continued emphasis on the importance of integrating critical thinking skills with classroom activities. Not only is it important for this point to be stressed, but there should also be many opportunities (workshops, inservice) provided for teachers to understand through description and to observe through demonstrations just how this skill can actually be incorporated into their everyday teaching.

As the number of educators who are committed to this type of integrated teaching begins to increase, further analysis might be directed to those modes and strategies which lend themselves very specifically to the presentation of higher level critical thinking skills. In conclusion, while it is true that a larger sampling would offer greater validity to the findings which have been discussed in this study, it is believed that research of this type can serve as a benchmark for addressing the issue of the various ways that teachers can effectively promote critical thinking development in the classroom.

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TABLE I

<u>TEACHER</u>	<u>GRADE</u>	<u>EXPERIENCE</u>	<u>ELUCATION</u>
A	2nd	4½ years	B.S. + 15 hours
B	3/4	3 years	B.S. + 15 hours
C	3rd	18 years	Masters in Ed.
D	2nd	11 years	Masters in Ed.

The years of experience and educational background of the four elementary classroom teachers.

TABLE II

The Teaching Style, Teaching Materials and
Teaching Strategies of the Four Elementary
Classroom Teachers

<u>TEACHING STYLE</u>	<u>HIGH LEVEL QUESTIONING</u>	<u>THINKING STRATEGIES</u>	<u>TEACHER DIALOGUE</u>	<u>INSTRUCTIONAL MATERIAL</u>
Expository (A)	Rarely	No	2	Basal
Integrated (B)	Consistently	Rarely	1, 3	Literature Based
Expository, Demonstration (C)	Occasionally	No	1, 2	Basal and the ** Success Program
Inquiry, Integrated (D)	Consistently	Occasionally	1, 2, 3	The Success Program and Literature-Based

DIALOGUE KEY:	Encouraging (1)
	Wait-Time (2)
	Open-Ended (3)

SUCCESS PROGRAM: For the vocabulary development of the Success Program, a single letter or a letter combination (blends, digraphs,) is presented to the class so that the students may generate their own words using the provided letters. These words are then listed on charts and posted for constant review. For comprehension development an interactive approach is used wherein anything in print, within reason, is considered to be a part of the comprehension curriculum. The students are encouraged to expand their knowledge within many subject areas.